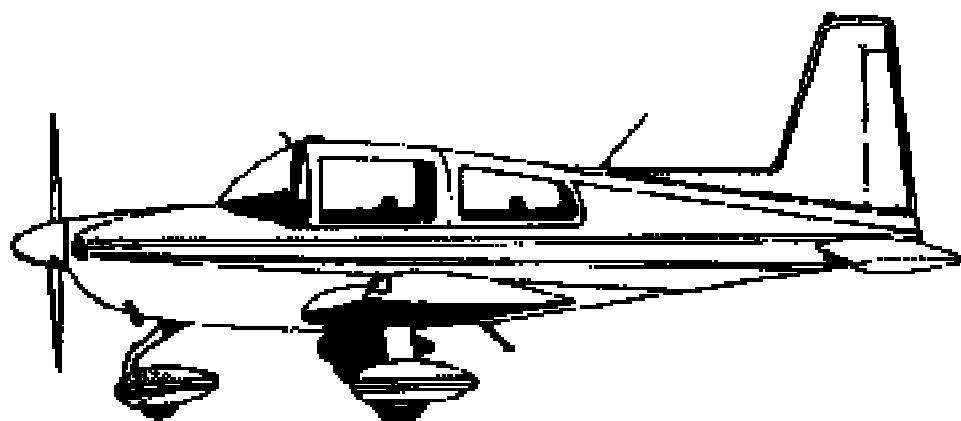




Grumman Tiger AA-5B Handling Notes

Part 1 – Specifications

1.0 Power Plant

Type	Lycoming 0-360-A4K
Rated Horsepower	180
Rated RPM	2700

The engine is four cylinder, direct drive, horizontally opposed, normally aspirated, air cooled.

2.0 Propeller

McCauley Fixed Pitch 1A 170/FFA 7563.
Diameter (cm) 190.5.

3.0 Principal Dimensions

Span	9.60 metres
Length	6.71 metres
Height	2.31 metres
Wing area	

4.0 Weight Specifications – All weights for VH-IGG only

Maximum all-up weight:

(i) Normal category	1088.62 kg (2400 lb)
(ii) Utility category	929.86 kg (2050 lb)

Maximum baggage (normal category)	54.43 kg (120 lb)
Empty weight (including unusable fuel 4.4kg, undrainable engine oil and Fixed Equipment 25/4/79)	656.8kg (1445 lbs)
Empty weight arm	2109.8 mm

Maximum useful load:

(i) Normal category	432.2 kg (950 lbs)
(ii) Utility category	273.06kg (600.7 lbs)

5.0 Tyres – Pressures and Sizes

Nose wheel	500 x 5 25 PSI
Main wheels	600 x 6 34 PSI



6.0 Fuel

Capacity:

(i) Useable litres	193
(ii) Total litres	199.1
(iii) Tabs litres	144 (19 USG)

Octane rating	100/130 or 100 LL
---------------	-------------------

7.0 Oil

Capacity (ie, 8 US quarts on the dipstick)	7.57 litres
Grade	Shell W100



Part 2 - Performance

1.0 Airspeeds

Climb:

- | | | |
|-------|--------------|--------|
| (i) | Best angle | 70 kts |
| (ii) | Best rate | 90 kts |
| (iii) | Cruise climb | 90 kts |

Cruise:

- | | | |
|------|--------------------------------|---------|
| (i) | 65% power: 2000 ft at 2400 RPM | 122 kts |
| (ii) | 75% power: 2000 ft at 2550 RPM | 132 kts |

Stalling:

- | | | | |
|------|-------------|-------------------|--------|
| (i) | Flaps up: | nil power at MAUW | 56 kts |
| (ii) | Flaps full: | nil power at MAUW | 53 kts |

Approach:

- | | | |
|-------|--|--------|
| (i) | Glide clean | 72 kts |
| (ii) | Glide full flap | |
| (iii) | Normal flaps and power
initially reducing to 69 kts | 72 kts |
| (iv) | Performance | 63 kts |

2.0 Miscellaneous Performance Figures

Best rate of climb at gross	850 ft/min
Absolute ceiling	
Service ceiling	13,800 ft
Take off run – refer performance charts	
Take off distance over 50 ft object – refer to performance charts	
Landing roll – refer to performance charts	

3.0 Safety Take-off Speeds

Normal nil flaps – as per charts.



4.0 Fuel Consumption (for flight planning)

65% power	37.5 litres/hour
75% power	40.0 litres/hour

5.0 Total Endurance

65% power	308 minutes
75% power	290 minutes



Part 3 – Operating Limitations

1.0 Maximum all up weight

Normal category	1088.62kg (2400lbs)
Utility category	929.86 kg (2050lbs)

2.0 Centre of Gravity Limitations

Forward limit (normal category only):

871 kg:	2057.4 mm aft of datum
1089kg:	2260.6mm aft of datum
Aft limit:	all weights at 2349.5 mm aft of datum

Datum is 1270 mm and is located at the front face of the lower portion of the firewall.

3.0 Airspeed Limitations

Never exceed speed (VNE)	172 kts
Maximum structural cruise (VNO)	142 kts
Maximum manoeuvres (VA)	113 kts
Maximum flap extension speed	103 kts
Maximum canopy open speed	113 kts

4.0 Crosswind Component

Maximum crosswind component	16 kts
-----------------------------	--------

5.0 Manoeuvres Permitted

Operations shall be limited to the normal flying manoeuvres, but may include straight and steady stalls and turns where the angle of bank does not exceed 60 degrees. Spins prohibited.

6.0 Smoking

Smoking is permitted except during take-off, landing or while the aircraft is on the ground and as directed by the pilot.



7.0 Power Plant Limitations

Maximum continuous	2700 RPM
--------------------	----------

Oil temperature:

Normal (green arc)	100F-245F
Maximum permissible (red line)	245F

Oil pressure:

Normal	60-90 PSI
Minimum (red line)	25 PSI
Maximum (red line)	100 PSI

Fuel pressure:

Normal	0.5 – 8 PSI
Minimum	0.5 PSI
Maximum	8 PSI

8.0 Occupants

Maximum number of occupants	4
Minimum number of crew	1



Part 4 - Handling

1 Pre-Flight Inspection

(a) GENERAL CHECK

When approaching the aircraft, check that it is in a suitable position for starting, clear of other aircraft and buildings and can be taxied out safely. Enter the aircraft and check:

- | | |
|-------------------------|--------------|
| (i) Canopy | Open |
| (ii) Control wheel lock | Remove |
| (iii) Ignition switch | Off |
| (iv) Master switch | Off |
| (v) Mixture | Idle cut-off |

(b) EXTERNAL CHECK

Port wing:

Flap secure and undamaged, wing tip and light undamaged. Aileron counterweight access unobstructed, wing inspection plates secure, tiedown removed, pitot tube unobstructed, fuel tank vent unobstructed, fuel tank check contents, inspect cap seal and secure cap, check tank drain, ensure fuel is free of water and sediment, check sump drain, ensure fuel is the correct colour, check landing gear wheel fairing and tyre, remove chocks.

Nose Section:

Check windshield is clean and undamaged, OAT gauge secure and undamaged, check fuel pump overflow drain unobstructed, fresh air vents unobstructed, air cleaner drain unobstructed, oil breather vent unobstructed, baffles secure, cowling secure and undamaged, propeller and spinner secure and undamaged, landing light checked, nose gear and fairing checked, tow bar removed, chocks removed, engine cooling openings clear, engine oil level, dipstick lightly secure (finger tight), vacuum pump vent clear, battery secure, alternator belt proper tension, cowl closed and locked.

Starboard Wing: Check fuel contents, cap seal and cap secured, tank drain, ailerons checked for freedom of movement, then as for Port Wing.

Starboard Fuselage: Static source unobstructed, antennas secure and undamaged, fuselage undamaged.

Tail Section: Elevators free movement, rudder free movement, trim tabs secure, tail cone and lights checked, tie down removed.

Port Fuselage: As for starboard but check baggage door secured.

(c) INTERNAL CHECK

On entering the aircraft, check flaps up, turn off the fuel, then adjust the seats and seat belts and check that passengers do likewise. Turn the master switch on and check all electrical instruments and required lighting is operational. Check the instrument panel from left to right making sure the radios are off, the controls are free, trim operative and set neutral. Check circuit breakers in.

3.0 Start-Up

Brakes	On
Mixture	Full Rich
Carburettor Heat	Off
Fuel	Select fullest tank
Prime	As required
Master/Alternator Switch	On
Flaps	Up
Auxiliary Fuel Pump	On check pressure then off
Propeller	Clear
Ignition	On left
Throttle	Open _ travel approximately
Starter Button	Press, release when engine starts
Ignition	On both
Oil Pressure	Check (if no pressure within 30 seconds, shut down engine)
Engine	Warm up at 100 RPM to 1200 RPM

Avoid prolonged idling while on the ground



4.0 Pre Take-off Checks

On reaching the holding point or holding bay, turn the aircraft as much as possible into wind, or at least 45 degrees across the taxiway.

B	Brakes	On
U	Undercarriage	Locked down
T	Trims	Set for take-off
	Throttle	Set 1000 RPM
M	Mixture	Rich
	Master	On
P	Pitch	Fine
F	Fuel	On fullest tank
	Fuel pump	On check for pressure change then off
	Flaps	Check then set up
I	Instruments	Check and set flight instruments
C	Controls	Free, full movement
	Carb Heat	Cold
H	Harness	Secure
	Hatches	Locked
E	Engine	Run up to 1800 RPM
		Check engine instruments and gauges
		Magnetos (175 max, 50 between)
		Carb Heat

Return engine to 1000 RPM

Check all switches on

Obtain take-off clearance – transponder on if required.

5.0 Take Off

- (a) Normal take-off
 - Auxiliary fuel pump On
 - Power Full
- (b) Crosswind take-off

As above but before commencing take-off check the wind direction and start initial take-off run with aileron into wind.

6.0 After Take-off Checks

After the aircraft is in a positive climb with an airspeed of not less than 65 kts.

Engine instruments	Check
Auxiliary fuel pump	Off
Power	Full
Attitude	90 kts
Trim for climb	
Check temperatures and pressures regularly	

7.0 Cruising

Normal maximum power 75%
Trim as required
Power setting 2200 to 2700 RPM
Mixture leaned as required
See Cruise Performance Charts at the end of these notes.

8.0 Let Down Procedures and Circuit Procedures

For normal let down, maintain cruising speed and regulate power to achieve desired rate of descent. The mixture should be fully rich. No smoking rule in force. Avoid continuous operation at engine speeds between 1850 and 2250 RPM.

B	Brakes	Off, heels on the floor
U	Undercarriage	Down and locked
M	Mixture	Rich, carb heat check for ice
F	Fuel	Cock, contents, pump on and pressure
H	Harness	Secure, seats upright

9.0 Approach and Landing

Flaps down (unless flapless landing) below 103 kts
Carb heat on if required
Power reduced to 1500 RPM
Speed 72 kts – trim to maintain
Speed on final approach 70 kts: reducing to 69 kts
Carb heat cold at 300 ft



Crosswind Landing

Approach as for normal landing, tracing down the center line. On roundout close the throttle and line the aircraft with the runway before touchdown with rudder. Use aileron as required to maintain wings level. After touchdown apply aileron into wind. In strong crosswind nil flap may be desirable.

Flapless Landing

In extreme strong or gusty winds a flapless approach may be preferred. In this case the approach speed should be 72 kts

CAUTION: The nose wheel on the Grumman Tiger should be held off as long as possible to prevent prop damage or porpoising. If this situation does occur do not continue landing, go around.

10.0 After Landing Drill

Leave the runway and move well clear of the holding point and stop.

Flap	Up
Auxiliary fuel pump	Off
Carb heat	Check off
Trim	Neutral

11.0 Shut Down Procedures

Brakes	On
Radios	Off
Engine	1000 RPM
Magnetos	Check left and right for dead cut
Mixture	Idle cut back
Throttle	Fully back
Ignition	Off and keys out (after prop stopped)
Master	Off
Fuel	Off
Chocks/Tiedowns	Installed and brakes released

If the aircraft has to be pushed back use the towbar – under no circumstances push on the spinner.



12.0 Starting Engine when Flooded

If the engine fails to start on the first try the second try should be made without Priming. If this also fails it is possible the engine is overprimed. Pull the mixture control to full lean, throttle full open, and turn the engine with the starter. When the engine starts, push the mixture control to full rich and reduce throttle.

Part 5 – Emergencies

1.0 Engine Failure after Take-off

Lower nose for glide. Change fuel tanks, if engine does not respond then glide for landing straight ahead or 30 degrees either side of the flight path and try to avoid obstacles.

***Do not try to turn back to the field ***

2.0 Engine Failure at Altitude (Forced Landing)

Engine fails

T	Close throttle, trim for glide – 72 kts
F	Fuel, switch tanks pump on, check pressure and contents
M	Mixture rich, carb heat hot
I	Ignition (left, right mags)

Pick suitable landing area, formulate an approach plan.
Check height – temps, pressure - throttle for available power.

If engine failure not located:

MAYDAY CALL

Safety checks – fuel off- switches off- brakes off

Harness tight and hatches unlocked

Master off on final

Warn passengers of the possibility of a heavy landing and to brace themselves suitably.

3.0 Fire

On ground – cranking

Continue to get a start which would suck the flames and accumulated fuel through the carburettor and into the engine.

If engine starts – Power 1800 RPM for few minutes.

Engine shutdown for inspection of damage.

- (a) Fuel selector off
- (b) Master switch off
- (c) Ignition switch off

If engine fails to start – evacuate passengers

Secure engine with mixture idle cutoff, master off, ignition off, fuel selector off.
Extinguish using extinguisher, seat cushion, wool blanket or dirt.

In flight – engine fire

Mixture	idle cut off
Fuel selector valve	Off
Master switch	Off
Cabin heat and air	Off
Airspeed	115 kts if fire is not extinguished, increase glide speed to attempt to blow the fire out.
Forced landing	Execute as described.

ELECTRICAL FIRE

If fire is in engine compartment:

Master switch	Off
Vents, cabin air and cabin heat	Off

Land aeroplane as soon as possible.

If fire is in cockpit:

Master switch	Off
All other switches	Off except for ignition switch
Vents, cabin air and cabin heat	Off
Fire extinguisher	If activated open the canopy to ventilate cabin area.

If fire appears to be out and electrical power is necessary to continue flight:

Master switch	On
Circuits	Check for faulty circuit. Do not reset
Radio/electric switches	On one at a time with delay after each until short circuit is located.
Vents, cabin air and heat	Open when fire is out.

Cabin Fire:

Master switch	Off
Vents, cabin air and heat	Closed
Fire extinguisher	If activated open canopy for ventilation.

Land as soon as possible.

4.0 Loss of Oil Pressure

If no temperature change is detected, the failure is most likely in the indicating system.

If oil temperature is high reduce power and proceed to the nearest suitable landing area. Be prepared for a forced landing.

5.0 Alternator Failure

Failure of the alternator is easily detected since the ammeter will show discharging to the extent of the loads being applied. If the alternator field circuit breaker opens (pops out) wait 15 seconds then attempt to reset by pushing the circuit breaker back into position. If it will not reset, turn off the alternator switch and land for electrical system inspection. Reduce electrical load as much as possible.

6.0 Engine Roughness

Carburettor heat on, if the roughness continues after 1 minute:

Carburettor heat off, mixture adjusted for maximum smoothness, electrical fuel pump on, switch fuel tanks, check engine gauges and then check magnetos. Use both position of magnetos unless roughness is such as to dictate use of single ignition position. If roughness cannot be rectified proceed to nearest aerodrome. Prepare for possible forced landing.

Part 6 – Documentation

Required: Aircrafts flight manual and handling notes.



Part 7 – Aircraft Systems

1.0 Fuel Systems

This consists of two tanks with a total capacity of 199.1 litres of which 193 litres are useable, two sump tanks (one in each wing root fairing), independent fuel gauges and a fuel selector valve. Flush mounted fuel tank vents are located in the bottom of the outboard wing panels, just forward and inboard from the wing tie downs. A mechanical fuel pump, mounted on the engine, transfers fuel from the tanks to the carburettor. This is backed up by an auxiliary electrical fuel pump. This is used when the engine driven pump fails to deliver adequate pressure as shown by the fuel pressure gauge and at low altitudes such as at take-off or landing. There are four fuel drains located one beneath each fuel tank and of the wing root on each side of the aircraft. A drain cup is provided in the glove compartment. Flight with an unserviceable auxiliary fuel pump is prohibited.

2.0 Landing Gear

The main landing gear struts are of tough, laminated fiberglass to achieve outstanding shock absorption and good ground stability. The nose gear is free-castering to approximately 90 degrees on either side of the centerline, which gives good manoeuvrability on the ground.

3.0 Control Systems

The control surfaces are operated by a combination of torque tubes and conventional cable systems. The elevator anti-servo trim tabs are located on the elevator trailing edges and are actuated manually by the trim wheel located on the center console. Ground adjustable tabs on the rudder and ailerons provide a simple method of adjusting directions and lateral trim. Flaps are electrically operated and provide a full range of settings by means of a spring loaded, three flap position switch. The flap actuator switch is held down until the flap position indicator shows the desired flap angle, when released it returns to neutral, and flap travel stops.

CAUTION: Abruptly releasing the switch may cause it to snap through the neutral detent, into the retract position.

4.0 Electrical System

This system uses a 14 volt, 60 amp alternator with internal power diodes which delivers DC power directly to the main bus through a 60 amp circuit breaker. An external voltage regulator controls the alternator output voltage and automatically adjusts the battery charging rate to maintain proper charge. The electrical system ammeter is located in the engine instrument cluster and indicates current charge (+) and discharge (-) of the battery. The dual magneto ignition system is completely independent of the aircraft's electrical system, and will continue to operate in the event of an electrical system failure. The master switch is the split rocker type which serves two functions. Side one (master) energises the battery circuit which produces the electrical field in the alternator. This then supplies all the required current for the system loads through the bus bar. Fuses and circuit breakers for the electrical systems are located on the lower right hand side of the instrument panel and spare fuses are located on the right side of the glove compartment.

5.0 Vacuum System

An engine driven vacuum system is available and provides the suction necessary to operate the attitude indicator and the directional gyro indicator. The system consists of a vacuum pump mounted on the engine, a regulator and vacuum system air filter on the aft side of the firewall below the instrument panel, and instruments (including a suction gauge) on the instrument panel. The suction gauge is located at the upper edge of the instrument panel. The desired suction range is 4.6" to 5.4" Hg. A suction reading above or below this range may indicate a system malfunction or improper adjustment, and in this case, the indicators should not be considered reliable.

6.0 Canopy

Entry into and exit from the aeroplane is accomplished by releasing the canopy latch and sliding the canopy aft. The canopy latch is actuated by an external handle on the front center of the canopy and an internal handle located inside the canopy at its front center. The external latch works by counterclockwise rotational and the internal handle opens the latch by rearwards motion. A lock on the left of the external handle provides a means of externally locking the canopy. It is designed to open a longitudinal distance of 86.4 cm and is limited by stops. The canopy can be partially opened in flight to provide ventilation or better visibility. However, it must be completely closed and locked when flying at airspeeds in excess of 113 kts. The cabin windows aft of the canopy are fixed and cannot be opened.

7.0 Heating and Ventilation Systems

Cabin heating and defrosting temperature is controlled by the Cabin Heat Control, located on the instrument panel above the throttle. When this control is pushed in, cabin heating is decreased and when pulled out, heating is increased. The cabin heat is directed into the cabin through vents near the firewall, under the instrument panel. To apply defrost open the sliding doors below the windshield. Ventilation is provided by vent controls located at the bottom left and right corners of the instrument panel. The air is directed through louvred vents. The rear cabin area vents are operated by a twisting motion. When cool and a high humidity do not use partial defrost as the windshield may fog rapidly on take-off. Always check defrost position before flight. The heater and fresh air systems can be operated simultaneously to provide a comfortable cabin temperature.

Part 8 – Pilot Maintenance

1.0 Tyre Inflation

For maximum service from tyres, keep inflated to proper pressure as per Part 1 of these notes.

2.0 Battery Service

The battery is accessible by opening the top cowl. The battery is equipped with an overboard vent and drain. It should be inspected periodically for proper fluid level and if the fluid is found to be low, fill as recommended by the battery manufacturer. DO NOT fill above visible battery plates.

3.0 Care of Windows and Canopy

It is recommended that you keep the plexiglass in the canopy, windshield and cabin windows clean and unscratched. The following is recommended:

- (a) If large deposits of mud and/or dirt have accumulated flush with clean water. Hand rubbing is recommended for stubborn patches to prevent scratching.
- (b) Wash with soap and water, using a sponge or soft cloth. DO NOT scrub or rub hard as abrasive action of the dirt will create fine scratches.
- (c) Grease and oil spots may be removed with a soft cloth soaked in kerosene.
- (d) After cleaning wax with a thin coat of hard polish-wax. Permatex 'D' a suitable windscreen polish. Apply with a soft cloth pad using an up and down motion, allow to dry, then polish off with a soft cloth. Permatex 'D' is available from the Flight School Office.
- (e) If severe scratch or marring occurs, jeweller's rouge is recommended. Follow directions to rub out scratch then polish.
- (f) Never use gasoline, benzine, alcohol, acetone, carbon tetrachloride, fire extinguisher fluid, anti-ice fluid, lacquer thinner or glass cleaner as these items may cause severe crazing.

PART 9 – Weight and Balance

1.0 Weight

Maximum take-off weight (normal category)	1089 kg
Maximum take-off weight (utility category)	930 kg
Maximum landing weight	1089 kg
Empty weight (VH-IGG only)	656.8 kg

2.0 Centre of Gravity

NORMAL CATEGORY

Forward Limit 2260.6 mm aft of the datum at 1089 kg and 2057.4mm aft of the datum at 871 kg or less, with linear variation between 871 kg and 1089 kg.

Rear Limit 2349.5 mm aft of the datum at all weights

UTILITY CATEGORY

Forward limit 2112.5 mm aft of the datum at 930 kg and 2057.4 mm aft of the datum at 871 kg or less with linear variation between 871 kg and 930 kg.

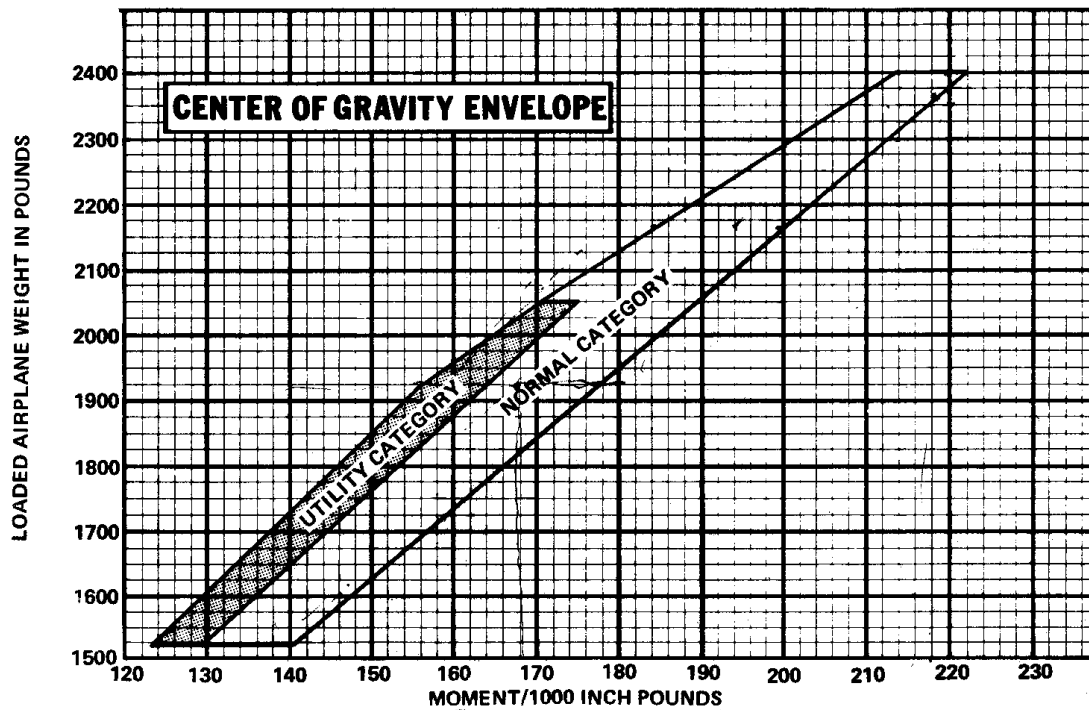
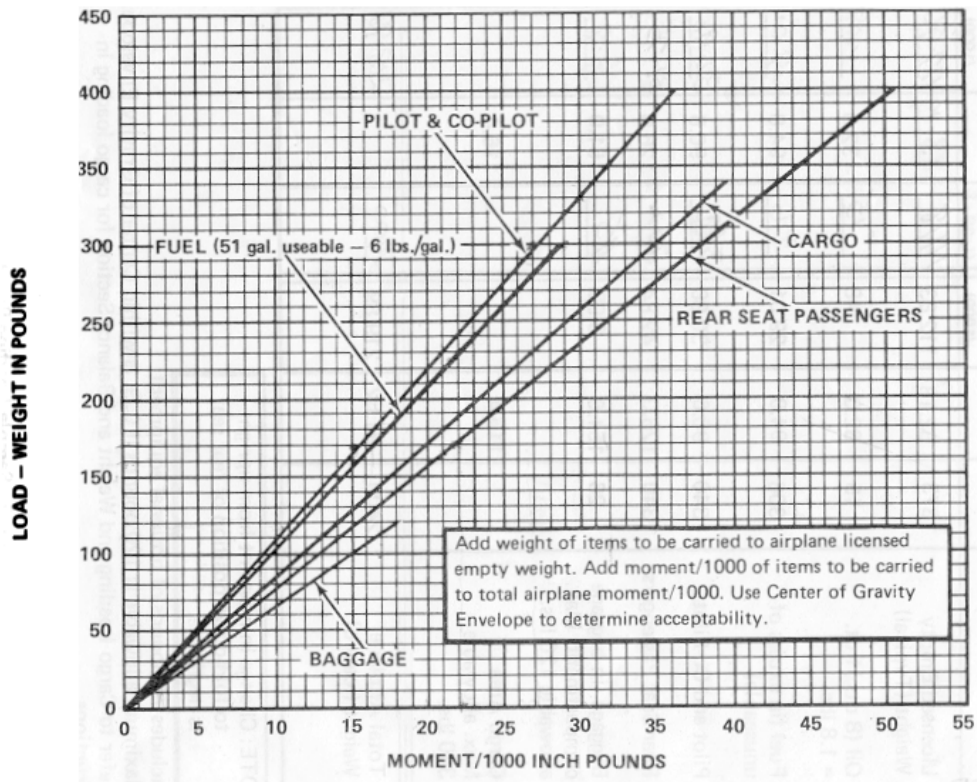
Rear Limit 2167.1 mm aft of the datum at all weights.

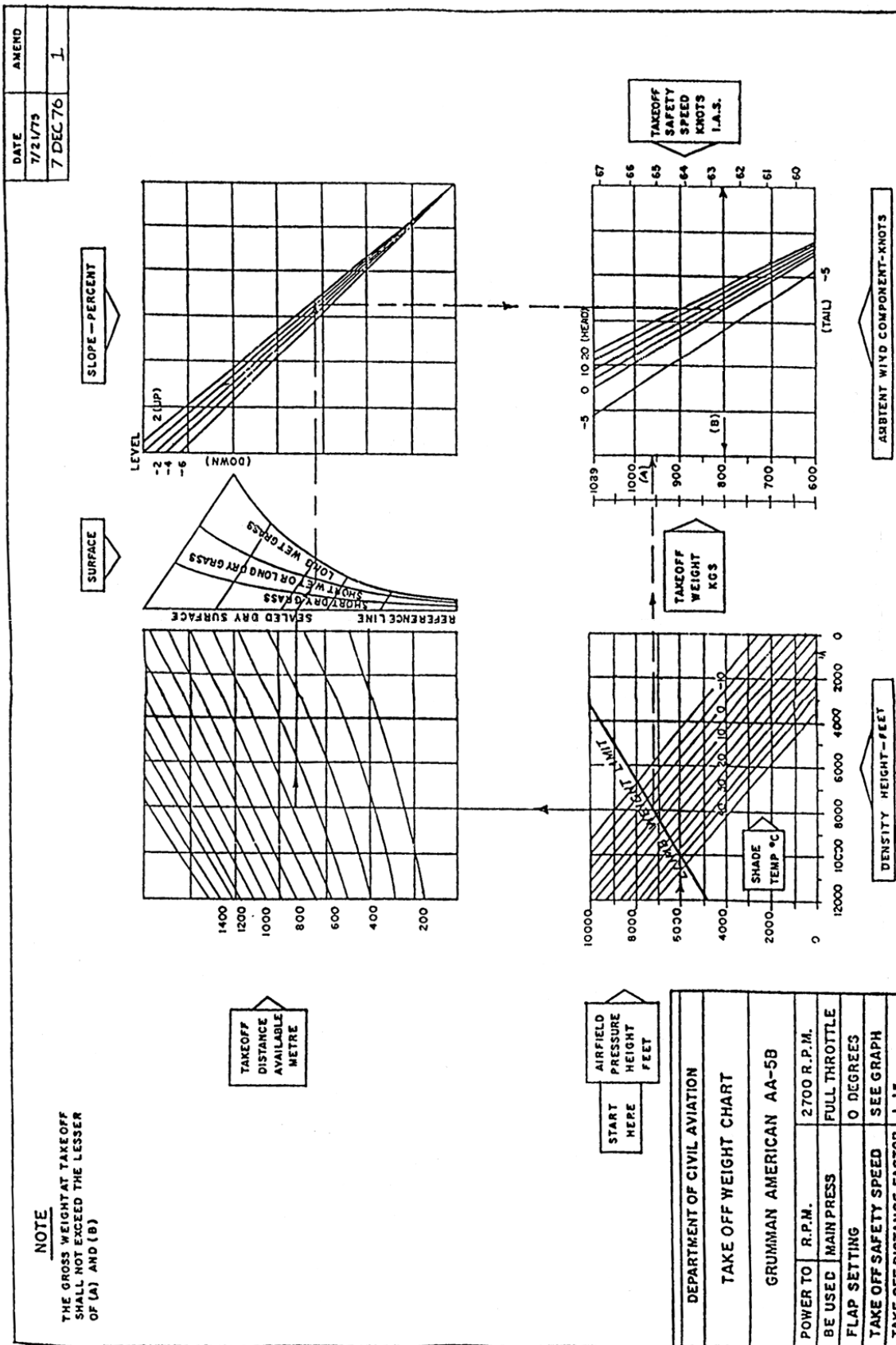
3.0 Datum

1270 mm forward of the front face of the firewall.

4.0 Baggage Compartment Loading

- (a) Maximum permissible baggage compartment load = 54 kg (normal category only).
- (b) Where rear passenger seats are folded to permit the carriage of cargo, the maximum load on the seat backs shall not exceed 154 kg.





25

Cruise Performance Charts

Conditions: Recommended lean mixture, weight 2400 pounds (1089kg)

PRESSURE ALTITUDE 2000 FEET												
RPM	20°C Below Std. Temp -9°C (16°F)				Standard Temp 11°C (52°F)				20°C Above Std. Temp 31°C (88°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
2700	96	142	163	14.4	89	141	162	13.3	88	140	161	13.1
2600	85	136	156	12.6	79	135	155	11.2	75	134	154	10.7
2500	76	130	149	10.9	71	129	148	10.4	67	128	147	10.0
2400	68	124	142	10.0	63	122	141	9.5	60	121	140	9.2
2300	60	117	135	9.2	57	115	132	8.7	54	113	131	8.4
2200	54	110	126	8.4	51	108	124	8.1	49	107	123	7.9
PRESSURE ALTITUDE 3000 FEET												
RPM	-11°C (12°F)				9°C (48°F)				29°C (84°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
2700	93	141	163	13.9	86	141	162	12.8	81	140	161	12.0
2600	83	135	156	12.3	77	134	155	11.0	73	134	154	10.6
2500	74	129	148	10.6	70	128	148	10.2	66	127	146	9.7
2400	67	123	142	9.9	62	122	140	9.4	59	120	138	9.0
2300	59	117	134	9.0	56	115	132	8.6	53	113	130	8.3
2200	53	109	125	8.3	50	107	123	8.0	48	105	121	7.8
PRESSURE ALTITUDE 4000 FEET												
RPM	-13°C (9°F)				7°C (45°F)				27°C (81°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
2700	90	141	162	13.4	84	140	161	12.5	78	139	160	11.1
2600	81	135	156	12.0	75	134	154	10.8	72	134	154	10.4
2500	72	129	148	10.5	68	129	148	10.0	64	127	146	9.6
2400	65	123	142	9.6	61	121	140	9.2	58	120	138	8.8
2300	58	116	134	8.9	54	114	131	8.5	52	112	129	8.2
2200	51	108	125	8.1	49	107	123	7.9	47	103	119	7.6
PRESSURE ALTITUDE 5000 FEET												
RPM	-15°C (5°F)				5°C (41°F)				25°C (77°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
2700	87	141	162	13.0	81	140	161	12.0	77	139	160	10.9
2600	78	134	155	11.1	74	134	154	10.6	69	132	152	10.1
2500	71	129	148	10.3	66	127	146	9.7	62	125	144	9.3
2400	63	122	141	9.5	59	120	138	9.0	56	119	137	8.7
2300	56	115	132	8.7	53	113	130	8.3	51	112	129	8.1
2200	50	108	124	8.0	48	106	121	7.8	46	104	119	7.6



Cruise Performance Charts (cont.)

Conditions: Recommended lean mixture, weight 2400 pounds (1089kg)

Note: Shaded area represents operation with full throttle. (F.T.)

PRESSURE ALTITUDE 6000 FEET												
RPM	20°C Below Std. Temp -9°C (16°F)				Standard Temp 11°C (52°F)				20°C Above Std. Temp 31°C (88°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
2700	85	141	162	12.6	79	139	160	11.2	75	139	160	10.8
2600	76	134	154	10.9	72	134	154	10.4	67	132	152	9.9
2500	69	129	148	10.1	64	127	146	9.6	61	125	144	9.2
2400	61	122	140	9.3	58	120	138	8.9	55	117	135	8.5
2300	55	114	131	8.5	52	112	129	8.2	50	110	127	8.0
2200	49	107	123	7.9	47	104	119	7.6	45	102	118	7.5
PRESSURE ALTITUDE 7000 FEET												
RPM	-11°C (12°F)				9°C (48°F)				29°C (84°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
2700	83	140	161	12.3	77	139	160	11.0	73	138	159	10.5
2600	74	134	154	10.7	70	133	153	10.2	66	131	151	9.7
2500	67	128	147	9.9	63	126	145	9.4	59	124	143	9.0
2400	60	121	139	9.1	56	119	137	8.7	54	117	135	8.4
2300	53	113	130	8.4	51	112	129	8.1	48	108	124	7.8
2200	49	107	123	7.8	46	103	119	7.6	45	102	117	7.4
PRESSURE ALTITUDE 8000 FEET												
RPM	-13°C (9°F)				7°C (45°F)				27°C (81°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
2700	80	139	160	11.2	75	139	160	10.8	71	137	158	10.3
2600	72	134	154	10.5	68	132	152	10.0	64	130	150	9.5
2500	65	127	146	9.7	61	125	144	9.2	58	123	142	8.9
2400	58	120	138	8.9	55	118	136	8.6	53	117	134	8.3
2300	53	113	129	8.3	50	111	128	8.0	48	109	125	7.8
2200	48	105	121	7.8	46	103	118	7.5	45	102	117	7.4
PRESSURE ALTITUDE 9000 FEET												
RPM	-15°C (5°F)				5°C (41°F)				25°C (77°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
2700	76	138	158	10.9	72	138	158	10.5	69	137	157	10.1
2600	71	134	154	10.4	66	131	151	9.8	63	130	149	9.4
2500	63	126	145	9.5	60	124	143	9.1	57	123	141	8.7
2400	57	119	137	8.8	54	117	135	8.4	52	115	132	8.2
2300	52	112	129	8.2	49	108	125	7.8	47	107	123	7.7
2200	46	103	119	7.6	45	102	117	7.4	45	101	117	7.4



Cruise Performance Charts (cont.)

Conditions: Recommended lean mixture, weight 2400 pounds (1089kg)

Note: Shaded area represents operation with full throttle. (F.T.)

PRESSURE ALTITUDE 10 000 FEET												
RPM	20°C Below Std. Temp -9°C (16°F)				Standard Temp 11°C (52°F)				20°C Above Std. Temp 31°C (88°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
2700	72	136	156	10.5	69	136	156	10.2	67	135	155	9.9
2600	68	132	152	10.0	64	130	150	9.6	61	129	148	9.2
2500	62	125	144	9.3	58	123	142	8.9	56	123	141	8.6
2400	56	118	136	8.6	53	117	135	8.3	50	113	130	8.0
2300	51	112	129	8.1	48	108	125	7.8	47	106	122	7.7
2200	46	104	120	7.6	45	102	117	7.4	45	101	116	7.4
PRESSURE ALTITUDE 11 000 FEET												
RPM	-11°C (12°F)				9°C (48°F)				29°C (84°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
F.T.	70	134	154	10.2	67	134	154	9.9	65	134	154	9.7
2600	67	132	152	9.9	63	130	150	9.5	60	129	148	9.1
2500	61	125	144	9.2	57	123	141	8.8	54	120	139	8.5
2400	55	117	135	8.5	52	115	133	8.2	50	114	131	8.0
2300	50	110	126	8.0	47	107	123	7.7	47	106	122	7.6
2200	45	102	117	7.5	45	101	117	7.4	45	101	116	7.4
PRESSURE ALTITUDE 12 000 FEET												
RPM	-13°C (9°F)				7°C (45°F)				27°C (81°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
F.T.	67	132	152	9.8	64	132	152	9.6	62	132	152	9.4
2600	65	131	151	9.7	61	129	148	9.3	58	128	147	8.9
2500	59	124	142	9.0	56	123	141	8.7	53	118	136	8.3
2400	54	117	135	8.4	50	113	130	8.0	49	111	128	7.9
2300	48	108	124	7.8	47	106	122	7.7	47	106	122	7.6
2200	45	102	117	7.4	45	101	116	7.4	45	101	116	7.4
PRESSURE ALTITUDE 13 000 FEET												
RPM	-15°C (5°F)				5°C (41°F)				25°C (77°F)			
	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH	% BHP	TAS KTS	TAS MPH	Fuel GPH
F.T.	64	130	150	9.5	62	130	150	9.3	60	130	150	9.1
2600	64	130	150	9.5	60	128	147	9.1	57	127	146	8.8
2500	58	123	142	8.9	55	121	139	8.5	52	118	136	8.2
2400	52	116	133	8.3	50	114	131	8.0	49	111	127	7.8
2300	48	109	125	7.8	47	106	122	7.6	47	106	122	7.6
2200	45	101	117	7.4	45	101	116	7.4	45	100	115	7.4

